

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference P-5786-PC	FOR FURTHER ACTION <small>see Form PCT/ISA/220 as well as, where applicable, item 5 below.</small>	
International application No. PCT/IL04/00286	International filing date (<i>day/month/year</i>) 29 March 2004 (29.03.2004)	(Earliest) Priority Date (<i>day/month/year</i>) 01 April 2003 (01.04.2003)
Applicant YISSUM RESEARCH DEVELOPMENT COMPANY OF THE HEBREW		

This international search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of 5 sheets.



It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the Report

- a. With regard to the language, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.



The international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

- b. ☒ With regard to any nucleotide and/or amino acid sequence disclosed in the international application, see Box No. I.

2. ☐ Certain claims were found unsearchable (See Box No. II)

3. ☐ Unity of invention is lacking (See Box No. III)

4. With regard to the title,



the text is approved as submitted by the applicant.



the text has been established by this Authority to read as follows:

5. With regard to the abstract,



the text is approved as submitted by the applicant.



the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. With regard to the drawings,

- a. the figure of the drawings to be published with the abstract is Figure No. _____



as suggested by the applicant.



as selected by this Authority, because the applicant failed to suggest a figure.



as selected by this Authority, because this figure better characterizes the invention.

- b. ☒ none of the figures is to be published with the abstract.

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Box No. 1 Nucleotide and/or amino acid sequence(s) (Continuation of item 1.b of the first sheet)

1. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, the international search was carried out on the basis of:

a. type of material



a sequence listing



table(s) related to the sequence listing

b. format of material



in written format



in computer readable form

c. time of filing/furnishing



contained in the international application as filed



filed together with the international application in computer readable form



furnished subsequently to this Authority for the purposes of search

2. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

3. Additional comments:

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A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : C12N 15/11, 15/85, 15/86; A61K 48/00
US CL : 536/23.1; 435/325; 514/44

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 536/23.1; 435/325; 514/44

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
Please See Continuation Sheet

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	SHIBUYA et al. Role of TAK1 and TAB1 in BMP signaling in early Xenopus development. EMBO J. February 1998, Vol. 17, No. 4, pages 1019-1028, see entire document	2,3,6-10
Y		1,4,5,11-86
Y	MOCHIDA et al. ASK1 Inhibits Interleukin-1 induced NF-KB Activity through Disruption of TRAF6-TAK1 Interaction. J. Biol. Chem. October 2000. Vol. 275, No. 42, pages 32747-32752, see entire document	1,14,19,20,41,42
Y	YOSHIDA et al. Negative Regulation of BMP/SMAD Signaling by Tob in Osteoblasts. Cell. December 2000. Vol. 103, pages 1085-1097, see entire document	18,24,25,27-30,35-40,47-56,058-75,78-81
Y	CARNINCI et al. Normalization and Subtraction of Cap-Trapper-selected cDNAs to prepare Full-Length cDNA Libraries for Rapid Discovery of New Genes. Genome Res. October 2000. Vol. 10, pages 1617-1630, see entire document.	4,5,10-12,15,16,22,23,34,45,57,69,70,76,82-86
Y	YAMAGUCHI et al. Identification of a member of the MAPKKK Family as a potential Mediator of TGF-beta signal transduction. Science. December 1995. Vol. 270. pages 2008-2011, see entire document	4,5,10-12,15,16,22,23,34,45,57,69,70,76,82-86



Further documents are listed in the continuation of Box C.



See patent family annex.

Special categories of cited documents:	
"A" document defining the general state of the art which is not considered to be of particular relevance	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"E" earlier application or patent published on or after the international filing date	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"O" document referring to an oral disclosure, use, exhibition or other means	"&" document member of the same patent family
"P" document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search

07 July 2005 (07.07.2005)

Name and mailing address of the ISA/US

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Alexandria, Virginia 22313-1450

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Date of mailing of the international search report

21 JUL 2005

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C. (Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	HOFFMAN et al. TGF-Beta-activated kinase-1 (TAK1), a MAP3K, interacts with SMAD proteins and interferes with osteogenesis in murine mesenchymal progenitors. J. Biol. Chem. May 2005. M5033682000, pages 1-33, see entire document	I-86

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Continuation of B. FIELDS SEARCHED Item 3:

EAST, STN: FILE MEDLINE

Search terms: TAK1, SMAD, BMP, MH2, IL-1, TNF, osteogenesis, proinflammatory cytokines, agonist, inhibitors